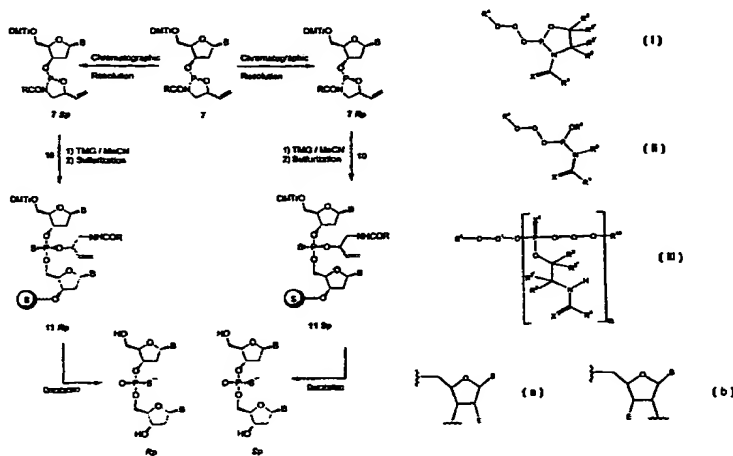




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> : C07H 19/10, 19/20, 21/00		A1	(11) International Publication Number: <b>WO 00/56749</b>
			(43) International Publication Date: 28 September 2000 (28.09.00)
(21) International Application Number: PCT/US00/04032		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 16 February 2000 (16.02.00)			
(30) Priority Data: 60/125,867 24 March 1999 (24.03.99) US			
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(54) Title: N-ACYLPHOSPHORAMIDITES AND THEIR USE IN OLIGONUCLEOTIDE SYNTHESIS



## (57) Abstract

The present invention provides a compound of formula (I), (II), or (III), wherein  $R^1$ ,  $R^2$ ,  $R^2'$ ,  $R^3$ , and  $R^3'$  are the same or different and each is H, an alkyl, an alkenyl, an alkynyl, a cycloalkyl, an aryl, or an aralkyl. Alternatively, either of  $R^2$  or  $R^2'$  combined with either of  $R^3$  or  $R^3'$  comprises a ring.  $R^4$  is a protecting group or a solid support.  $R^5$  is H or an alkyl.  $R^6$  is a protecting group, an amidoalkyl, an alkyl, an alkyl ketone, an alkenyl, an alkynyl, a cycloalkyl, an aryl, or an aralkyl.  $R^{15}$  is H or a protecting group. Q and Q' are the same or different and each is a nucleoside, an oligonucleotide comprising a nucleoside, or an oligomer comprising a nucleoside, which is of formula (a) or (b), wherein B is a labeling group, an alkyl, an alkenyl, an alkynyl, a cyclic group optionally containing one or more heteroatoms, or an amino; and, E is H, a halogen, a hydroxy, an alkoxy, an ester, an amino or a protecting group. X and X' are independently O, S, or Se, and n is an integer from 1 to about 300. Each Q in each monomeric unit defined by n can be the same or different. The present invention further provides a method of preparing a polymer using the N-acylphosphoramidite of formula (I) or (II).

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